1. Akio

Program Name: Akio.java Input File: akio.dat

Akio loses things frequently. At the end of the night of partying out on the town, Akio realizes that he is missing a lot of his things. Luckily, people have called him to let him know where all of his things are. But, since it is late and all of the places are closing, he needs the shortest path from the door of each place to his lost item in the room so he can get in and out quickly.

All the rooms are represented with walls/tables as **"#"** indicating places where Akio cannot walk. All places where Akio can walk are indicated with a **"."** The item in the room that Akio is seeking is indicated with an **"o"**. Akio always enters the room where the **"."** is on the edge of the room, indicating the door. In each room he has only left one item, but some of the rooms can have multiple doors, so you must always choose the closest door for the path for Akio.

For example, in the room shown below, the shortest path to get to the item is from the first door at the top of the diagram. The solution on the right shows this path with the bolded numbers marking the steps.

```
####.##.##
###.....##
###...####
###.######
#○..######
###.######
###......#
###.######
###.....##
#######.##
```

```
####1##.##
###32...##
###4..####
###5######
#876######
###.######
###......#
###.######
###.....##
#######.##
```

To help Akio, you don't need to show him the steps, but just tell him the length of the shortest path.

Input: The first integer will be the number of data sets to follow. Each data set is made up of a 10x10 grid of characters representing one of the rooms where Akio has left one item, as described above. Each 10x10 grid will be followed by a **"-"** for separation.

Output: For each room map, output the length of the shortest path from a door to his lost item.

Sample Input:

```
3
####.##.##
###.....##
###...####
###.######
#○..######
###.######
###......#
###.######
###.....##
#######.##
-
##########
###....○##
###...####
###.######
#...#....#
###.######
###.#....#
###.######
###.....##
#######.##
-
#######.##
#.....###
#.########
#.........#
########.#
#.........#
#.########
#.########
#......○##
##########
-
```

Sample Output:

```
8
17
35
```